User's Guide

15“ TFT display

Type: DP860-UX

Art. No.: 141023

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Creation Date: 25/05/2007
Date of revision: 02/07/2007

TKZ: 146296

EMC and Safety Notice
Federal Comm. Commission
Radio Frequency Interference Statement
This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause interference to radio communications. This equipment has been tested and found to comply with Class B digital devices, pursuant to Part 15 of the FCC rules which are designed to provide reasonable protection against such interference when operated in a commercial or residential environment.

Countermeasures if interference occurs
You are encouraged to do the following if interference occurs while you are operating the device:

1. Turn OFF the unit and unplug the AC adapter from the outlet to see if the interference disappears.
2. Connect the AC adapter to the outlet in another room and check if the interference still exists.
3. Use an outlet that is far away from the interfered appliance.
4. Re-orient your computer in respect to the interfered appliance to see if there is improvement.

If all of these failed, please call your dealer for help.

CE
This equipment complies with the requirements set out in the Council Direction on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility (89/336/EEC).

Power Conservation
It is recommended that you enable the power saving functions even not running with battery.

Recycling
All materials used in the construction of this unit are recyclable or environmentally friendly. No CFC or related materials were used in the manufacturing process or inside the product.

Please recycle the packing materials, and at the end of the unit's life, all other materials in accordance with the local regulations.

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1 Preamble

The roda DP860-UX is a multi-function-display developed for rough environmental conditions with a screen diagonal of 31.8 cm (15''). This screen is able to perform a maximum of physical resolution of 1,280x1,024. 16.7 million colours can be represented.
Caused by its robust metal cabinet it can be used in military vehicles. It has a resistive USB tochsystem, a USB touchcontroller with 8 function keys (F1-F8) and an integrated 2-port USB 2.0 Hub for direct connection of two USB periphery devices like keyboard or mouse.
There is also an integrated stereo amplifier with two speakers which can be connected to the soundcard.

The roda DP860-UX has signal input devices for DVI and RGB analogue. The signal sources can be chosen by the On Screen Display (OSD). Representation can be in 1:1 (scaled) or it can be in the usual resolutions like 640x480, 800x600, 1024x768. In the case of 1024x768 electronic will address the passive picture elements in blue.

OPTION: Picture in Picture (PIP) Functionality
The internalal electronic of DP860-UX is able to work up and show two signal sources at the same time. The electronic distinguishes between a primary screen (PS) and a secondary screen (SS). The secondary screen is usually connected by video signal source and partially cross-fades the primary screen which shows the DVI or RGB analogue signal source.
The secondary screen can not be scaled and is able to work out input timings with max. 755 horizontal pixels. Optionally roda can deliver it with two changeable video inputs and can be connected with CCIR or NTSC signal sources. One video input is a CVBS (FBAS) input, the second one can be realised as CVBS (FBAS) or as Y/C (SVHS). The recognition of the colour happens automatically.

INFORMATION: The second screen can show a standard VGA picture or boot picture, if a video picture is shown on the first screen.

2 Various photographs

View: keyboard with joystick

View: frontside of display

2.1.1 Scope of delivery

1 ea.	DP860-UX
1 ea.	Installation CD for touchscreen
1 ea.	User's guide

2.1.2 I/O Ports

Signal inputs rear side (from the left to the right):

supply voltage input	3-pol VG96912A8-98 PN connector
USB upstream/sound (optional)	9-pol-Sub-D socket
DVI / USB-upstream	DVI-AD socket
RGB analogue	15-Pol Sub-D-HD socket
USB1-downstream	USB-A socket
USB2-downstream	USB-A socket

2.1.3 Operator Keyboard (12 keys)

The keyboard can be found on the front side of the display below the screen. The function of the keys is assured by a USB upstream connection with the host computer (from the left to the right):

Number of key	key	remark
1	F1	PC function key (USB)
2	F2	PC function key (USB)
3	F3	PC function key (USB)
4	F4	PC function key (USB)
5	F5	PC function key (USB)
6	F6	PC function key (USB)
7	F7	PC function key (USB)

8	F8	PC function key (USB)
9	backlight off	Display internal
10	reduce brightness	display internal
11	enhance brightness	display internal
12	display/computer on/off	display internal

2.1.4 OSD Menu

The OSD operator keyboard is located on the top border of the electronic box (from the left to the right). Controlling happens with four quadratic keys:

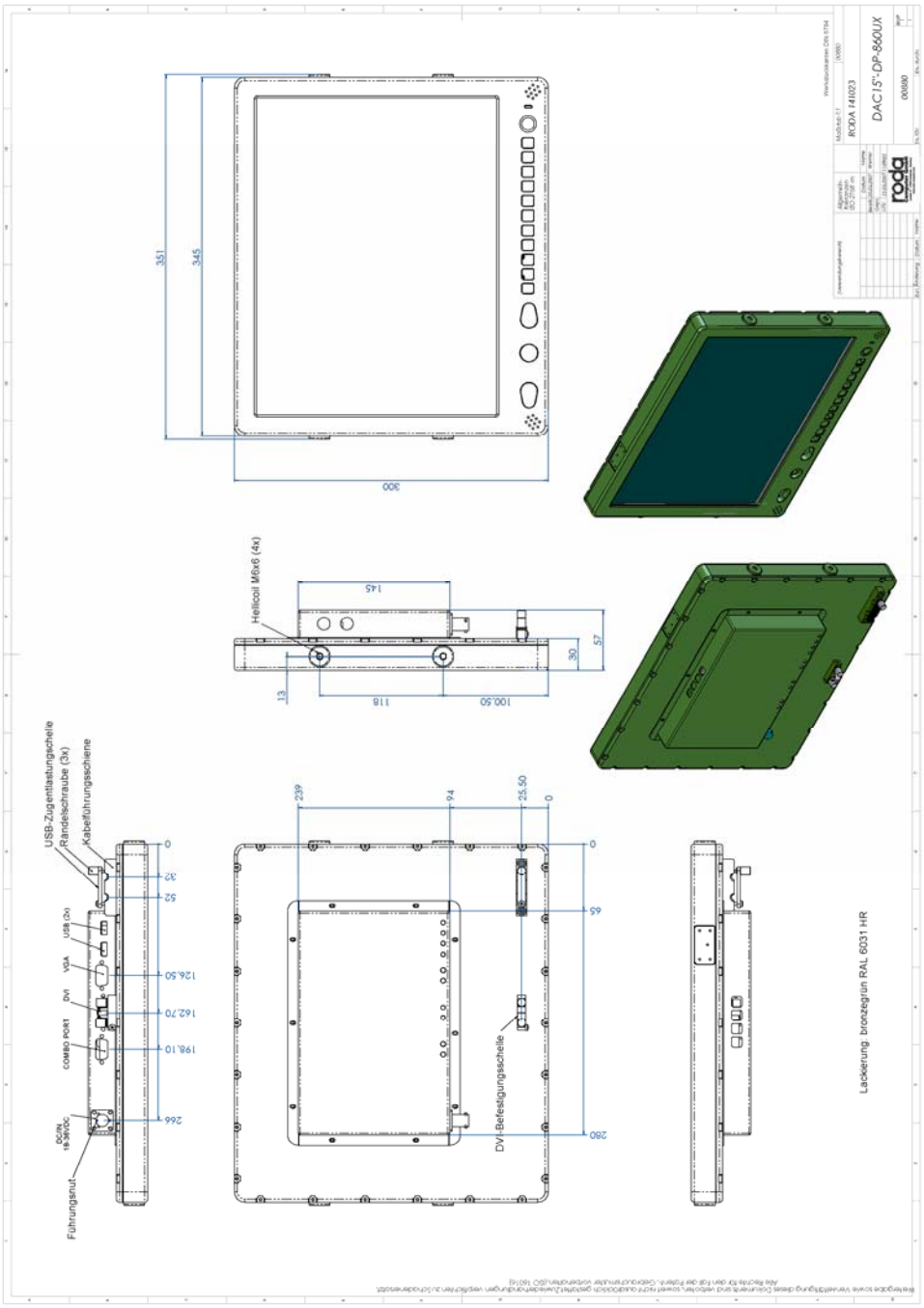
key	symbol of key	function
1	hand symbol	ENTER / Select
2	arrow left	menu Navigation leftside/ reduce value
3	arrow right	menu Navigation right / enhance value
4	rectangle	ESC/Exit

2.1.5 Volume Keys

The keys for the adjustment of volume are on the right border of the electronic box. Arrangement on the right side from top to bottom.

key	symbol of key	function
1	speaker ↑	enhance volume
2	speaker ↓	reduce volume

2.1.6 Mechanical Dimensions



3 Description of OSD Menu

Press any key to reach the main menu of OSD. By pushing UP or DOWN you reach the submenu. You can activate the submenu by pushing ENTER. With ESC you can leave the menu.

INFORMATION: OSD menu is switched off automatically 20 seconds after last input.

Changed values only will be saved, if SAVE MODE is executed.

INFORMATION: By pushing the button ENTER and UP at the same time all adjustments are reset to factory setting.

There are the following submenues:
SETUP, INFORMATION, SATURATION, OSD POSITION, FIRMWARE, SYSTEM, GAMMA, SIZE, ADC, SAVE MODE, SHARPNESS, CONTRAST, BRIGHTNESS, EXIT.

For all subemues:
Choice of functions with UP/DOWN; activating with ENTER; leaving with ESC.

For all functions:
Adjustment of values, toggle or choice of an adjustment with UP/DOWN.

3.1.1 Setup

function	description
PS_SOURCE	choice of the PS source: VGA, DVI
PS_OUTPUT	all Timings of TimingTable → VGA_60, SVGA_60,...

3.1.2 Option: PIP (Picture in Picture)

function	description
SS_SOURCE	choice of SS source: VGA, DVI, Video1, S Video1, Video2, S Video2
SIZE	1/1, ½, 1/3, ¼ , bei Video nur ½, 1/3, ¼.
BORDER	show red frame around PIP
SWITCH	switching on/off PIP
LIMIT	not activated
PIP AUTO	PIP with UP / DOWN in all four corners and in the middle of the picture

3.1.3 Information (input impossible)

function	description
display	single / dual format, i.e. RGB type of display, i.e. DIS-2
PS	source, i.e. video_1 input timing output window
SS	Source, i.e. video_1 input timing size

3.1.4 Saturation

function	description	Default
SATURATION	Adjustment of screen saturation from 0 to 255 value 0 = black / white presentation	64

3.1.5 OSD Position

function	description
OSD H POS	shifting of OSD horizontal
OSD V POS	shifting of OSD vertical
OSD AUTO	centering of OSD
ALPHA	alpha value of OSD not transparent: 31 transparent: 0

3.1.6 Firmware (Input impossible)

function	description
	Deposit of information, for example date of software. Not used. No influence on function.

3.1.7 Option: System (only with PIP/video)

function	description
PS_TRIPIXEL	On/off PS Tripixel
SS_TRIPIXEL	On/off PS Tripixel (no function when executing without PIP/video)
FILM	On/off film Detection (no function when executing without PIP/video)
MOTION	On/off motion compensation (no function when executing without PIP/video)
THRESHOLD	Adjustment of level for position recognition (no function when executing without PIP/video)
DITHER	On/off dither function

3.1.8 Gamma

function	description	default
GAMMA	Adjustment of gamma values. from 1 to 7	off

3.1.9 Size

function	description
PS_H_SIZE	change of horizontal size PS
PS_V_SIZE	change of vertical size PS
PS_H_POS	change of horizontal position PS

PS_V_POS	change of vertical position PS
PS_H_CAP	change of horizontal capture PS
PS_V_CAP	change of vertical capture PS

3.1.10 ADC (only for RGB analogue)

function	description
PHASE	adjustment of phase, from 0 to 31
CLOCK	Adjustment of sampling rate in AD converter, sampling raite +/- 120

3.1.11 Save Mode

function	description
SAVE MODE	with ENTER changed adjustments can be saved

3.1.12 Sharpness

function	description	default
SHARPNESS	on/off sharpness function	off

Contrast

function	description	default
CONTRAST	adjustment of contrast, from 0 to 255	62

3.1.13 Brightness

function	description	default
BRIGHTNESS	adjustment of digital brightness, (not backlight !), from 0 to 255	130

4 Option: Direct Key mode

The Direct Key Mode can be activated as factory sample. In this case the OSD keys have changed functions as follows:

key	**description**
ESC	shading of backlight (as long as button is pushed)
ENTER	PIP function on/off
DOWN	digital brightness darker (not backlight)
UP	digital brightness brighter (not backlight)

INFORMATION: Direct Key Mode can be adjusting as factory sample, if the DP860-UX is delivered together with the computer.

5 Technical Data

Optical features

- Light density: 255cd/m² (typ.) with touchscreen
- contrast: 480:1 (typ.)
- Response time ton+toff: 22ms (typ.)
- Angle of view 10:1 r/l: 160° o/u: 160° (typ.)

Resolution (TFT)
1.024x768 pixel (XGA), 16.7 Mio. colours or 256 shades of grey

Display Standards
VGA, SVGA, XGA max. 60 Hz)

Signals
Analogue RGB 0,5 – 1,5Vss by 75 Ohm
Syncronisation (H-Sync, V-Sync): 2,4-3,6Vss by 1K Ohm
DVI 1.0 compatible
USB 2.0, capacity max. 500mA per downstream port

Power Supply
19V DC, <30 W
Environment
Temperature referring MIL-STD-810F method 501.4 and 502.4
operating -32°C to +55°C (no condensation)
storage -40°C to +80°C
Vibration referring MIL-STD-810F method 514.5 procedure 1, cat. 20, Fig. 514.5C-3
Shock referring MIL-STD-810F method 516.5 procedure 1
15g, 3ms 100 vertical shocks,
100g, 0,5ms 3 shocks per axis,
25g, 6ms 3 shocks per axis,

EMV
MIL-STD-461E

Protection Class
IP54 referring EN60529

Weight
Max. 3,5 Kg

Dimensions (without cables)
351mm x 300mm x 57mm (WxHxD)

6 Cleaning and Maintenance

ALWAYS turn OFF power and unplug power cord before cleaning.

The exterior may be wiped with a clean, soft and lint-free cloth (i.e. Glasses cleaning cloth 3M). If it is difficult removing dirt, apply non-ammonia, non-alcohol based glass cleaner to the cloth and wipe.

For salty water please clean with fresh water a lint-free cloth. Please do not use any sharp-edged objects to clean the device.

7. Troubleshooting

Should the device failed to function properly; you may try the following to troubleshoot it.

- Check cable connections.
- Check AC/ vehicle adapter and the power source.
- Minimize the configuration, i.e. remove extra peripherals and devices.
- Set factory default.
- Re-install driver and application software related to display or touch screen.

8 Repair Service

If troubleshooting steps are unsuccessful, consult your dealer for service. If it is necessary to send in your computer for repairs, you can download a service waybill on the roda homepage (www.roda-computer.com), which you have to fill in.

Shipping instructions:

1. Use original shipping container and packing materials, if possible.
2. If the original packing materials are not available, wrap the equipment with soft material then put the wrapped equipment into a hard cardboard shipping box.

3. Include this sheet with the following information:
    - Name
    - Address
    - Serial number, Customer number, Article number
    - Place and date of purchase or the original invoice number
    - Date of failure
    - A DETAILED description of the problems you have encountered
    - A list of the hardware/ software configuration, if applicable.

4. Clearly mark the outside of the shipping box with the service waybill. If service waybill is not present on the shipping box, delays will be a consequence or even denial of receipt, because no identification possible and it might be returned.

Service address: roda Service Center Bredenhop 20 D – 32609 Hüllhorst Tel.: +49/ 5744- 944 470 Fax.:+49/ 5744- 944 475 E-Mail: support@roda-computer com	Business hours: Monday – Thursday 08.30 – 12.30 & 13.00 – 16.30 Friday 08.30 – 12.30 & 13.00 – 15.00